CALIFORNIA ENERGY COMMISSION

QUARTERLY REPORT

CONCERNING

MTBE USE IN CALIFORNIA GASOLINE

July 1 through September 30, 2000

Report to the Legislature

STAFF REPORT

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Gray Davis, *Governor*

Quarterly Report Concerning MTBE Use in California Gasoline

July 1 through September 30, 2000

Background

Senate Bill 1001 (Burton; Chapter 814, Statutes of 1999) requires the Energy Commission to prepare a quarterly report on the use of methyl tertiary butyl ether (MTBE) in California gasoline. This report summarizes the amount of MTBE each California refinery used during the preceding quarter July 1 through September 2000.

The amount of MTBE reported in this document is the quantity blended at each refinery location for use in the production of California Reformulated Gasoline (CaRFG) and intended for sale in the State. The numbers do not include any MTBE used at California refineries for the production of any type of gasoline intended for sale outside the State. In addition, a number of small refineries operating in the State are not included in this report because they do not produce gasoline.

MTBE, a compound containing oxygen, is an oxygenate that is used to produce gasoline in California. California refiners also use two other oxygenates, ethanol and tertiary amyl methyl ether, but in significantly smaller volumes compared to MTBE. Federal law requires California refiners to use a minimum amount of oxygen in all reformulated gasoline sold in severe and extreme ozone-nonattainment regions of the State. Those areas in California (mostly in Southern California and the Sacramento Metropolitan Area) account for over 70 percent of the gasoline used in the State. California has requested a waiver from this requirement from the U.S. Environmental Protection Agency, and a response is still pending.

The California Air Resources Board adopted reformulated gasoline regulations that enable refiners to produce fully complying gasoline without the use of any oxygenates. Thus, if the request to waive the Federal minimum-oxygen requirement were granted, California refiners would be able to reduce the volume of MTBE blended into gasoline. However, until they complete refinery modifications, refiners will likely need some MTBE to help them meet desired octane levels in premium grades of gasoline and in reduced quantities in other grades to help achieve compliance with reformulated-gasoline specifications.

Third Quarter 2000 Results

California refiners used 9,596,000 barrels of MTBE to make CaRFG during the third quarter of 2000. This sum represents approximately 104 thousand barrels per day of MTBE or nearly 4.4 million gallons per day.[1] Table 1 shows the use of MTBE by each refinery in California and total CaRFG production. Compared to the previous quarter,

[1] A barrel is equivalent to 42 U.S. gallons.

total volume of MTBE used by California s refiners increased by 8.6 percent. CaRFG production totaled 89.0 million barrels in the second quarter and 89.2 million barrels in the third quarter, for a corresponding 0.3 percent increase.

Although the production of CaRFG by California refiners was relatively unchanged, the concentration of MTBE in the gasoline increased from 9.9 percent in the second quarter to 10.8 percent in the third quarter of 2000. Figure 1 illustrates the concentration of MTBE used in California s gasoline for each of the quarters during 2000. The drop in concentration of MTBE during the second quarter of 2000 was primarily a result of the price of MTBE relative the price of CaRFG being much greater compared to the first and third quarters of this year. Figure 2 is a chart that compares the average quarterly price of CaRFG to the price of MTBE. As indicated by the chart, the difference between MTBE price and CaRFG was similar for the first and third quarters. However, the difference was much greater for the second quarter, an indication that there was an economic incentive for refiners to use less MTBE, relative to the other two quarters.

MTBE use can vary significantly for individual refineries from quarter to quarter due to a number of factors that affect the overall level of CaRFG production and MTBE use. These factors include:

- planned refinery downtime (typically for maintenance);
- unplanned refinery outages due to process equipment problems;
- seasonal changes in gasoline demand;
- seasonal changes in CaRFG standards (which are more stringent during the summer months); and
- shifts in production of non-MTBE gasoline (which is typically higher during the winter months).

Note, the actual volume of pure MTBE is less than the totals as illustrated below. The purity of MTBE varies depending on the source. Approximately 88 percent of the MTBE used by California refiners is imported and its quality is normally 95 percent pure MTBE with 5 percent impurities in the form of other hydrocarbons. The other source of MTBE originates from production facilities located within some California refineries. The purity of this MTBE is normally lower than that of the imported MTBE, increasing physical volumes of this portion of the supply.

Table 1
California MTBE Use By Refinery Location

Refiner	California Location	MTBE Use This Quarter 3rd Qtr — 2000 (Thous. of Barrels)	MTBE Use Previous Quarter 2nd Qtr — 2000 (Thous. of Barrels)	Change From Previous Quarter (Percent)
BP[1]	Carson	2,028	1,659	+ 22.2
Chevron	El Segundo	1,139	1,098	+ 3.7
Chevron	Richmond	142	193	- 26.4
Equilon[2]	Bakersfield	228	231	- 1.3
Equilon[3]	Los Angeles	573	541	+ 5.9
Equilon[4]	Martinez	807	731	+ 10.4
Exxon-Mobil	Torrance	707	669	+ 5.7
Kern Oil	Bakersfield	81	80	+ 1.2
Tosco	Los Angeles	853	769	+ 10.9
Tosco	Rodeo	453	473	- 4.2
UDS[5]	Avon	532	405	+ 31.4
UDS[6]	Wilmington	877	857	+ 2.3
Valero[7]	Benicia	1,176	1,131	+ 4.0
State Refinery MTBE Totals		**9,596**	**8,837**	**+ 8.6**
State CaRFG Production		**89,204**	**88,962**	**+ 0.3**
Statewide Average MTBE Content		**10.8 %**	**9.9 %**	

Source: California Energy Commission form number Q1001

[1] Formerly known as the ARCO — Carson refinery prior to the merger between BP Amoco and ARCO.

[2] Formerly known as the Texaco — Bakersfield refinery prior to the merger between Texaco and Shell.

[3] Formerly known as the Texaco — Los Angeles refinery prior to the merger between Texaco and Shell.

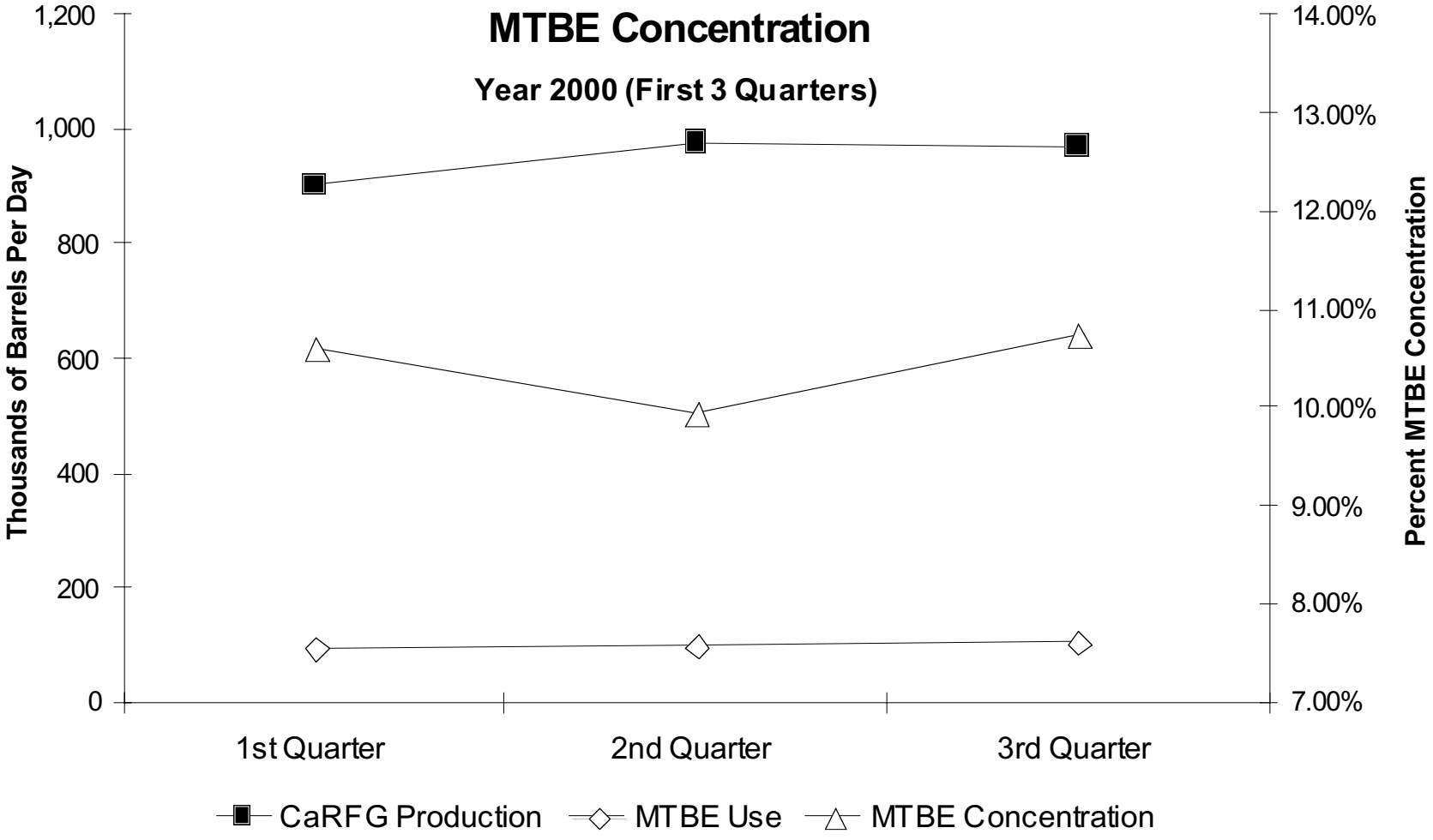
[4] Formerly known as the Shell — Martinez refinery prior to the merger between Texaco and Shell.

5 Formerly known as the Tosco — Avon refinery prior to the purchase by Ultramar Diamond Shamrock.

6 Ultramar Diamond Shamrock

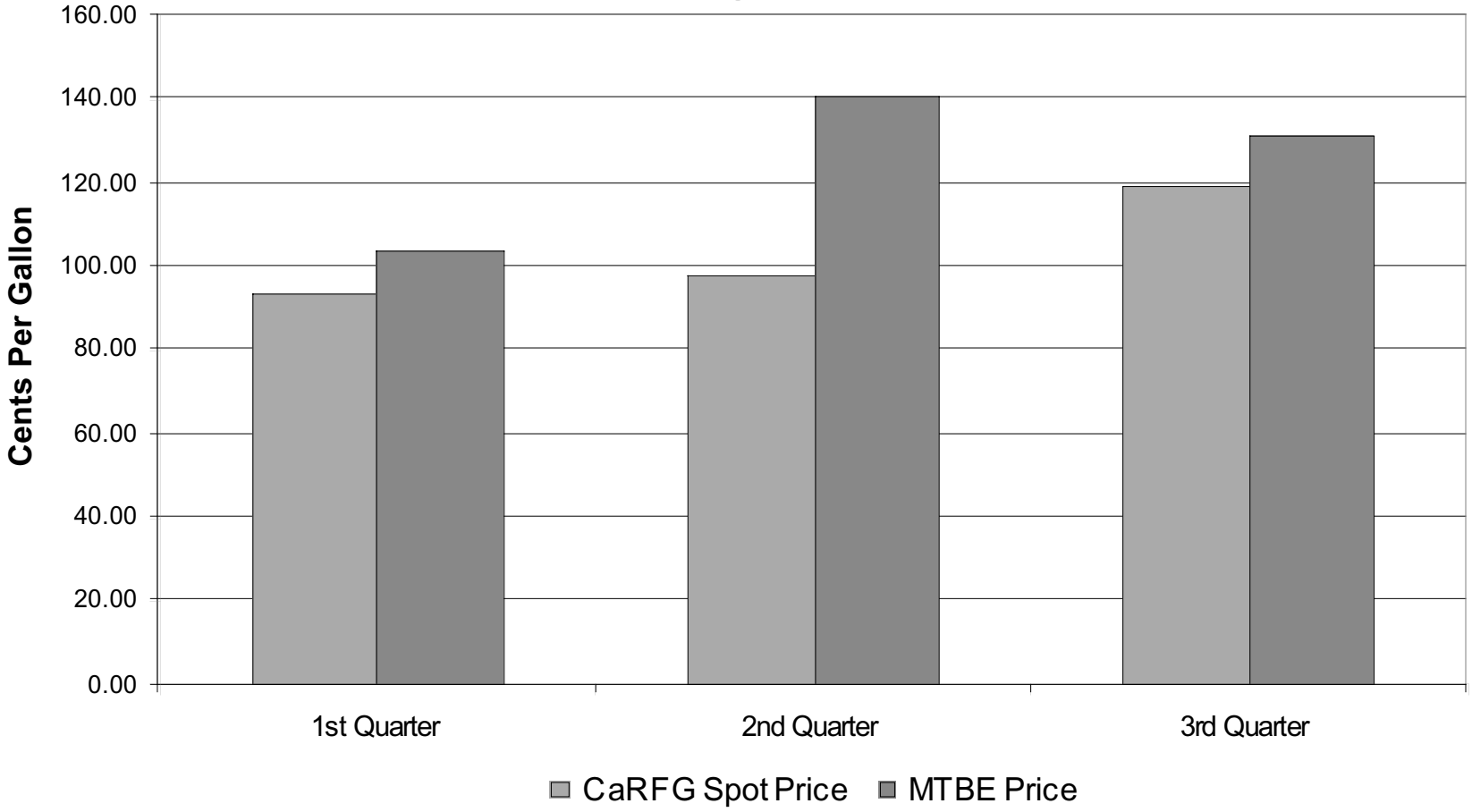
7 Formerly known as the Exxon/Mobil — Benicia refinery prior to the purchase by Valero.

Figure 1
California Gasoline
MTBE Concentration
Year 2000 (First 3 Quarters)



Sources: Petroleum Industry Information Reporting Act data and CEC form Q1001

Figure 2
CaRFG vs. MTBE Prices
Los Angeles - 2000



Source: Oil Price Information Service